

REMARKS

This paper is being filed together with a Request for Continued Examination and the requisite fee pursuant to 37 C.F.R. § 1.114. Entry of the foregoing, reexamination and further and favorable reconsideration of the subject application in light of the following remarks, pursuant to and consistent with 37 C.F.R. § 1.114, are respectfully requested.

The Office Action Summary correctly indicates that claims 2-6, 15, 17, 18, and 21-28 were pending in the application. Claims 2-6, 15, 17, 18, and 21-28 have been considered and stand rejected.

By the present amendment, claims 2-6, 15, 17, 18, 21-28 have been amended, and claims 29-32 have been added.

Claims 4, 5, 21-23 and 28 directed to methods have been amended to recite that the methods comprise the recited steps in the order presented therein, *i.e.*, that the steps are performed in the order recited. Claims 15 and 26 directed to apparatuses have been amended to recite that the elements thereof are connected in sequence as recited. Additional amendments have been made throughout the claims for the sake of easier reading of the claims and to delete unnecessary recitations, and to eliminate redundancy. Support for the amendments and new claims may be found throughout the specification and original claims, for example in the Figures illustrating the steps of the methods and the elements of the apparatuses in sequence, and also at pages 8-13 of the specification. With respect to claim 17, specific support may be found at page 9.

No prohibited new matter has been introduced by way of the above amendments. Applicants reserve the right to file a continuation or divisional application on subject matter canceled by way of this Amendment.

Rejections under 35 U.S.C. § 103

Claims 2-3, 5, 15, 17 and 21-26 stand rejected under 35 U.S.C. § 103 as allegedly being unpatentable over U.S. Patent No. 4,366,125 ("Kodera et al.") in view of U.S. Patent No. 4,494,357 ("DiGeronimo").

Claims 4 and 28 stand rejected under 35 U.S.C. § 103 as allegedly being unpatentable over U.S. Patent No. 4,366,125 ("Kodera et al.") in view of U.S. Patent No. 4,494,357 ("DiGeronimo") and further in view of U. S. Patent No. 3,692,468 ("Loliger et al.").

Claim 6 stands rejected under 35 U.S.C. § 103 as allegedly being unpatentable over U.S. Patent No. 4,366,125 ("Kodera et al.") in view of U.S. Patent No. 4,494,357 ("DiGeronimo") and further in view of U. S. Patent No. 5,364,645 ("Lagunas-Solare et al.").

Claims 18 and 27 stand rejected under 35 U.S.C. § 103 as allegedly being unpatentable over U.S. Patent No. 4,366,125 ("Kodera et al.") in view of U.S. Patent No. 4,494,357 ("DiGeronimo") and further in view of U. S. Patent No. 5,744,094 ("Castelberg et al.").

Each of these rejections are respectfully traversed.

The prior art fails to establish a prima facie case of obviousness. To establish a prima facie case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. M.P.E.P. § 2143.

Each of the pending rejections relies upon Kodera et al. as the primary reference. The proposed combinations of references fail to teach all the elements of the claimed invention.

Further, the prior art fails to provide any motivation to modify the references as would be required to arrive at the present invention. Koder et al. does not teach or suggest the sequence of steps recited in the present claims. The technique of Koder et al. and the other references cited by the Examiner, exemplify the technically inferior methods used for the last twenty years by the entire packaging industry, which failed to arrive at the present invention, despite a long-felt need for improved methods. In particular, Koder et al. does not teach or suggest applying hydrogen peroxide to packaging material and then substantially removing the applied hydrogen peroxide before irradiating the packaging material with UV light. The secondary references are alleged to suggest various features of the embodiments recited in the claims. However, even the combination of all the cited references fails to cure the deficiencies of Koder et al. in that the combination fails to teach or suggest the steps of the presently claimed method or the arrangement of the presently claimed apparatus.

In the Amendment and Reply filed August 19, 2005, Applicant pointed out that prior to the present invention, it was not believed that the steps of the presently claimed method could function when carried out in the sequence recited in the claims. By the present amendment, claims 4-5, 15, 21-23, 26 and 28 have been amended to emphasize that the recited steps are carried out and arranged sequentially as recited therein, and in the apparatus, the means for performing the steps are arranged in the sequence described in the claims.

The Office has acknowledged that Koder et al. teaches the importance of a synergistic sterilization effect obtained by the combination of irradiating packaging material to which hydrogen peroxide has been applied. Koder et al. did not appreciate and does not suggest that the hydrogen peroxide can be substantially removed from the packaging material before irradiation. Thus, Koder et al. clearly teaches away from the presently claimed invention. As a result, a person of ordinary skill in the art would not have had any

motivation to substantially remove the hydrogen peroxide prior to irradiating the packaging material or a reasonable expectation of achieving a successful sterilization in doing so.

The surprising nature of the results achievable by the presently claimed sequence of steps is further demonstrated by Reidmiller et al., *Journal of Food Protection*, 66(7):1233-40, 2003 (attached to the Amendment and Reply filed August 19, 2005 as Annex 2). At page 1238, Reidmiller et al. reports that "Even if there is drying between peroxide exposure and UV radiation, synergistic killing can occur." Panels B, C, and D of Figure 6 on page 1238 demonstrate the surprising fact that synergistic killing can occur even after peroxide is substantially removed by drying. The concluding remarks on page 1239 state that the new findings, that killing of hydrogen peroxide exposed spores by UV light is just as effective after drying "should lead to a more effective use of peroxide-UV light regimens for sterilization. Certainly they will allow more freedom in machine design." Indeed, even in 2003 the effectiveness of the sequence of steps recited in the present claims was considered surprising by persons of skill in the art.

From the foregoing, and also for the reasons stated in the Amendment and Reply filed August 19, 2005, it is clear that the prior art fails to establish a prima facie case of obviousness. Not only does the prior art fail to teach or suggest the sequence of steps that comprise claimed method and corresponding apparatus, but there is clear teaching in the prior art that would tend to eliminate any motivation or reasonable expectation of success in modifying the prior art as would be required to arrive at the presently claimed invention. Furthermore, there is clear secondary evidence in the published literature of the field that the results obtained by the claimed methods were surprising to a person of ordinary skill in the art.

For at least these reasons, withdrawal of the rejections is appropriate and is respectfully requested.

CONCLUSION

In view of the foregoing, further and favorable action in the form of a Notice of Allowance is believed to be next in order. Such action is earnestly solicited.

In the event that there are any questions relating to this Amendment and Reply of the application in general, it would be appreciated if the Examiner would telephone the undersigned concerning such questions so that prosecution of this application may be expedited.

The Director is hereby authorized to charge any appropriate fees that may be required by this paper, and to credit any overpayment, to Deposit Account No. 02-4800.

Respectfully submitted,

BUCHANAN INGERSOLL PC

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